

CLAIM AMENDMENTS:

Pending Claims

Claims 1 and 2 (Canceled).

Claim 3 (Currently Amended): A The method as recited in claim 2, comprising the following steps:

(a) acquiring frames of imaging data representing a succession of images of a patient's heart during a study using an imaging system;

(b) automatically time stamping each acquired frame with respective times generated by a first clock;

(c) automatically calculating respective offsets of said first clock relative to a reference clock for each time stamp associated with said acquired frames;

(d) storing said acquired frames and said time stamps and said offsets associated with said acquired frames;

(e) acquiring physiologic data from said patient during said study using a hemodynamic monitoring system;

(f) automatically time stamping data in said acquired physiologic data representing one or more predetermined cardiac events with respective times generated by a second clock;

(g) automatically calculating respective offsets of said second clock relative to said reference clock for each time stamp associated with said physiologic data;

(h) storing said acquired physiologic data and said time stamps and said offsets associated with said acquired physiologic data;

(i) computing which one of said acquired frames was acquired in substantial synchronism with a first predetermined

cardiac event based on said time stamps and said offsets; and

(j) associating a first acquired frame identified by step (i) with said first predetermined cardiac event,

further comprising the step of displaying said first acquired frame of imaging data concurrently with acquired physiologic data having a visual indicator indicating a physiologic datum corresponding to said first predetermined cardiac event.

Claim 4 (Currently Amended): A The method as recited in claim 2, further comprising the step of following steps:

(a) acquiring frames of imaging data representing a succession of images of a patient's heart during a study using an imaging system;

(b) automatically time stamping each acquired frame with respective times generated by a first clock;

(c) automatically calculating respective offsets of said first clock relative to a reference clock for each time stamp associated with said acquired frames;

(d) storing said acquired frames and said time stamps and said offsets associated with said acquired frames;

(e) acquiring physiologic data from said patient during said study using a hemodynamic monitoring system;

(f) automatically time stamping data in said acquired physiologic data representing one or more predetermined cardiac events with respective times generated by a second clock;

(g) automatically calculating respective offsets of said second clock relative to said reference clock for each time stamp associated with said physiologic data;

(h) storing said acquired physiologic data and said time stamps and said offsets associated with said acquired physiologic data;

(i) computing which one of said acquired frames was acquired in substantial synchronism with a first predetermined cardiac event based on said time stamps and said offsets; and

(j) associating a first acquired frame identified by step (i) with said first predetermined cardiac event; and

(k) performing quantitative coronary analysis based at least in part on said first acquired frame.

Claim 5 (Canceled).

Claim 6 (Currently Amended): The method as recited in claim [[5]] 4, further comprising the ~~step of~~ steps of:

(l) computing which one of said acquired frames was acquired in substantial synchronism with a second predetermined cardiac event based on said time stamps and said offsets; and

(m) associating a second acquired frame identified by step (k) with said second predetermined cardiac event,

wherein step (k) comprises performing left ventricular analysis based at least in part on said first and second acquired frames.

Claim 7 (Currently Amended): The method as recited in claim [[5]] 6, wherein said first and second predetermined cardiac events are the diastole and systole of the same cardiac cycle.

Claim 8 (Currently Amended): The method as recited in claim [[1]] 4, further comprising the steps of automatically performing ECG analysis on said acquired physiologic data to identify said acquired physiologic data representing said predetermined cardiac events.

Claim 9 (Currently Amended): The method as recited in claim [[1]] 4, wherein step (g) is performed using a distributed network clock synchronization protocol.

Claim 10 (Currently Amended): The method as recited in claim [[1]] 4, wherein said acquired frames of imaging data and said acquired physiologic data are stored in an asynchronous server.

Claim 11 (Currently Amended): The method as recited in claim [[1]] 4, wherein each of said acquired frames of imaging data is encapsulated in a DICOM object having a header containing respective fields for an associated time stamp and an associated offset.

Claim 12 (Currently Amended): The method as recited in claim [[1]] 4, wherein said imaging data is acquired using X-rays.

Claim 13 (Currently Amended): The method as recited in claim [[1]] 4, further comprising the step of injecting a contrast agent into the cardiovascular system of said patient before said frames of imaging data are acquired.

Claim 14 (Currently Amended): The method as recited in claim [[1]] 4, wherein said physiologic data comprises electrocardiogram waveform data.

Claim 15 (Currently Amended): The method as recited in claim [[1]] 4, wherein said physiologic data comprises blood pressure measurement data.

Claim 16 (Currently Amended): The method as recited in claim [[1]] 4, wherein one of said predetermined cardiac events is the onset of cardiac contraction.

Claim 17 (Currently Amended): The method as recited in claim [[1]] 4, wherein one of said predetermined cardiac events is peak cardiac contraction.

Claims 18-36 (Canceled).

Claim 37 (Currently Amended): A The method as recited in claim 36, comprising the following steps:

(a) automatically determining a first offset of a first local clock relative to a reference clock, said first local clock dictating the time of day in an imaging system;

(b) automatically adjusting said first local clock by an amount that is a function of said first offset to synchronize said first local clock with said reference clock;

(c) automatically determining a second offset of a second local clock relative to said reference clock, said second local clock dictating the time of day in an hemodynamic monitoring system;

(d) automatically adjusting said second local clock by an amount that is a function of said second offset to synchronize said second local clock with said reference clock;

(e) acquiring a frame of imaging data representing an image of a patient's heart during a study using said imaging system;

(f) automatically time stamping said acquired frame with a time generated by said adjusted first local clock;

(g) storing said acquired frame and said time stamp associated with said acquired frame as an imaging file;

(h) acquiring physiologic data from said patient during said study using said hemodynamic monitoring system;

(i) automatically time stamping a datum in said acquired physiologic data representing a predetermined cardiac event with a time generated by said adjusted second local clock; and

(j) storing said acquired physiologic data and said time stamp associated with said acquired physiologic data as a

physiology file,

wherein steps (a) through (j) are performed repeatedly over the course of a study to acquire a multiplicity of frames of imaging data and physiologic data, further comprising the steps of:

selecting a frame of imaging data acquired by said imaging system at a time substantially synchronized with a predetermined cardiac event recorded in said physiologic data acquired by said hemodynamic monitoring system, said frame selection being based on comparison of time stamps in imaging files with time stamps in physiology files, said selected frame having a time stamp that differs from a time stamp associated with a physiologic datum corresponding to said predetermined cardiac event by a minimum amount; and

performing quantitative analysis based at least in part on said selected frame of imaging data.

Claim 38 (New): The method as recited in claim 3, wherein step (g) is performed using a distributed network clock synchronization protocol.

Claim 39 (New): The method as recited in claim 3, wherein said acquired frames of imaging data and said acquired physiologic data are stored in an asynchronous server.

Claim 40 (New): The method as recited in claim 3, wherein each of said acquired frames of imaging data is encapsulated in a DICOM object having a header containing respective fields for an associated time stamp and an associated offset.

Claim 41 (New): The method as recited in claim 3, wherein said imaging data is acquired using X-rays.

Claim 42 (New): The method as recited in claim 3, further comprising the step of injecting a contrast agent into the cardiovascular system of said patient before said frames of imaging data are acquired.

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Claim 43 (New): The method as recited in claim 3, wherein said physiologic data comprises electrocardiogram waveform data.

Claim 44 (New): The method as recited in claim 3, wherein said physiologic data comprises blood pressure measurement data.